

WHAT IS CLAIMED IS:

1. A composite structure, comprising:
 - a. a foam sheet comprising polyolefin; and
 - 5 b. a coating disposed on at least one surface of said polyolefin foam sheet, said coating comprising at least one member selected from ethylene/propylene rubber, homogeneous ethylene/alpha-olefin copolymer, ethylene/acrylic acid copolymer, ethylene/vinyl acetate copolymer, and blends of the foregoing,
- 10 whereby, said coating is capable of bonding said polyolefin foam sheet to a second foam sheet having a different chemical composition than said polyolefin foam sheet at a bond strength of at least about 4 lb_f/inch.
2. The composite structure of claim 1, wherein said bond strength is at least about 4.5 lb_f/inch.
- 15 3. The composite structure of claim 1, wherein said polyolefin foam sheet comprises polyethylene homopolymer or copolymer and said second foam sheet comprises polypropylene homopolymer or copolymer.
- 20 4. The composite structure of claim 1, wherein said polyolefin foam sheet comprises polypropylene homopolymer or copolymer and said second foam sheet comprises polyethylene homopolymer or copolymer.
- 25 5. The composite structure of claim 1, wherein said coating comprises ethylene/propylene rubber or ethylene/vinyl acetate copolymer.
6. The composite structure of claim 1, wherein said coating is substantially solventless.

7. The composite structure of claim 1, wherein said polyolefin foam sheet comprises polyethylene homopolymer or copolymer having a density ranging from about 0.4 to about 15 pounds/ft³.

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8. The composite structure of claim 1, wherein said polyolefin foam sheet comprises polypropylene homopolymer or copolymer having a density ranging from about 0.5 to about 10 pounds/ft³.

10 9. The composite structure of claim 1, further including a second foam sheet comprising a material of a different chemical composition than said polyolefin foam sheet and bonded by said coating to said polyolefin foam sheet at a bond strength of at least about 4 lb_f/inch.

15 10. The composite structure of claim 9, wherein said polyolefin foam sheet comprises polyethylene homopolymer or copolymer and said second foam sheet comprises polypropylene homopolymer or copolymer.

20 11. The composite structure of claim 9, wherein said polyolefin foam sheet comprises polypropylene homopolymer or copolymer and said second foam sheet comprises polyethylene homopolymer or copolymer.

12. A multilayer composite structure, comprising:

- 25 a. a first foam layer comprising polyethylene homopolymer or copolymer;
- b. a second foam layer comprising polypropylene homopolymer or copolymer; and
- c. a coating disposed between and bonding said first and second foam layers together at a bond strength of at least about 4 lb_f/inch, said

coating comprising at least one member selected from ethylene/propylene rubber, homogeneous ethylene/alpha-olefin copolymer, ethylene/acrylic acid copolymer, ethylene/vinyl acetate copolymer, and blends of the foregoing.

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13. The composite structure of claim 12, wherein said coating comprises ethylene/propylene rubber or ethylene/vinyl acetate copolymer.

14. The composite structure of claim 12, wherein said coating is substantially solventless.

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15. The composite structure of claim 12, wherein said first foam layer comprises low density polyethylene.

16. The composite structure of claim 12, wherein said first foam layer has a density ranging from about 0.4 to about 15 pounds/ft³.

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17. The composite structure of claim 12, wherein said second foam layer comprises polypropylene homopolymer.

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18. The composite structure of claim 12, wherein said second foam layer has a density ranging from about 0.5 to about 10 pounds/ft³.

19. The composite structure of claim 12, wherein the bond strength between said first and second foam layers is at least about 4.5 lbf/inch.

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20. The composite structure of claim 12, wherein said structure is in the form of a bodyboard flotation article.

21. The composite structure of claim 20, wherein said polyethylene foam layer has a thickness ranging from about 1/16 to about 1 inch and said polypropylene foam has a thickness ranging from about 1 to about 4 inches.

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22. A method for making a composite structure, comprising:

a. providing a foam sheet comprising polyolefin; and

b. coating at least one surface of said polyolefin foam sheet, said coating comprising at least one member selected from ethylene/propylene rubber, homogeneous ethylene/alpha-olefin copolymer, ethylene/acrylic acid copolymer, ethylene/vinyl acetate copolymer, and blends of the foregoing,

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whereby, said coating is capable of bonding said polyolefin foam sheet to a second foam sheet having a different chemical composition than said polyolefin foam sheet at a bond strength of at least about 4 lb_f/inch.

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23. The method of claim 22, wherein said bond strength is at least about 4.5 lb_f/inch.

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24. The method of claim 22, wherein said polyolefin foam sheet comprises polyethylene homopolymer or copolymer and said second foam sheet comprises polypropylene homopolymer or copolymer.

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25. The method of claim 22, wherein said polyolefin foam sheet comprises polypropylene homopolymer or copolymer and said second foam sheet comprises polyethylene homopolymer or copolymer.

26. The method of claim 22, wherein said coating comprises ethylene/propylene rubber or ethylene/vinyl acetate copolymer.

27. The method of claim 22, wherein said polyolefin foam sheet comprises polyethylene homopolymer or copolymer having a density ranging from about 0.4 to about 15 pounds/ft³.

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28. The method of claim 22, wherein said polyolefin foam sheet comprises polypropylene homopolymer or copolymer having a density ranging from about 0.5 to about 10 pounds/ft³.

10 29. The method of claim 22, wherein said coating is substantially solventless.

30. The method of claim 22, further including the step of bonding a second foam sheet to said polyolefin foam sheet via said coating, said second foam sheet comprising a material of a different chemical composition than said polyolefin foam sheet.

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31. The method of claim 30, wherein said polyolefin foam sheet comprises polyethylene homopolymer or copolymer and said second foam sheet comprises polypropylene homopolymer or copolymer.

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32. The method of claim 30, wherein said polyolefin foam sheet comprises polypropylene homopolymer or copolymer and said second foam sheet comprises polyethylene homopolymer or copolymer.

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